Combined Administration of Chloral, Morphia, and Atropia.—Dr. ROBERTS BARTHOLOW, of Cincinnati, read (October 19) before the New York Society of Neurology and Electrology a paper on this subject. The following is a condensed summary of the results obtained from the simultaneous administration of these three articles.

Chloral differs from morphia, when injected subcutaneously, in the more decided systemic effects and the less local impression on the sentient nerves. As regards the systemic effects, the action of chloral is very much the same when administered hypodermically as by the stomach. The chief danger is an arrest of the respiratory movements. Chloral does not exert any chemical action on atropia when the two are held in solution together, for dilatation of the pupil of a cat takes place when the combined solution is instilled into the eye. Dilatation of the pupil also happens when they are administered hypodermically together. An apparent antagonism is observed as regards their action on the heart when the solutions of chloral and atropia are placed in contact with the heart of a frog when in position in the chest, after division of the medulla, or when the heart is removed. The action of the heart is further found to continue much longer when a lethal dose of chloral is administered together with atropia. In rabbits the same result is produced by the conjoined administration of the two agents.

Atropia is found to prolong the chloral narcosis several hours in rabbits, and diminishes the sensibility to pain. In man the excitant action of atropia hinders the occurrence of the chloral narcosis, but rather deepens the sopor when it at last supervenes. The effects of atropia last much longer, and are, apparently, in no way prevented by chloral.

Morphia deepens in every way the effects of chloral. Dr. Bartholow found, in the course of some experiments on himself, that many of the unpleasant effects of morphia are modified, as regards the wakefulness caused by the latter, but are not modified as regards the subsequent nausea, vomiting, vertigo, and constipation. When the two agents are administered conjointly, a much less quantity of chloral is necessary in order to produce sleep.

These agents act much more happily when administered simultaneously. Chloral causes sleep, morphia relieves pain, and atropia prevents or lessens the depression in the respiratory and cardiac movements caused by the other two, whilst it contributes to their cerebral effects.

These physiological studies are confirmed by the therapeutical results. The combination of chloral, morphia, and atropia is adapted to those cases of *insomnia* caused by pain, or in which chloral and morphia alone merely increase the cerebral excitement, as in hypochondria, puerperal mania, etc. This combination is also indicated in cases of fatty and irritable heart.

When pain is to be relieved, chloral is not so serviceable alone as in combination with morphia and atropia. The local administration—that is, the insertion of the medicament at the site of pain—is more effective than the merely systemic impression. This is especially the case in tic-douloureux, sciatica, and coccydynia, which are much more effectively treated by injections practised into the neighbourhood of nerves which are the seat of pain. The combination of a local irritant and benumber with a systemic anodyne is more curative than either used singly.

In cases of *muscular spasm* the author of the paper had obtained excellent results from the combined use of chloral, morphia, and atropia, and he especially called attention to the efficacy of these agents in the cramps of cholera. Many cases of spasmodic asthma and hay-fever had been benefited by their conjoint administration.—*Med. Record*, Dec. 1, 1874.

Erysipelas treated with Sulphate of Quinia.—Dr. Y. R. LE MONNIER recommends (*New Orleans Med. and Surg. Journ.*, Nov. 1874) the sulphate of quinia, given in doses of two grains every hour, for the cure of erysipelas. He says he employed it, with advantage, in his wards at Charity Hospital, New Orleans, at a time when for five months the disease reigned epidemically, so that on many occasions he dared not use the knife. He has also used it as a *prophylactic*, and he quotes one case of fistule of the left nates, in which he deemed it necessary to operate, and where he administered quinia as a prophylactic, two grains every two hours. This patient was for seventeen days in an infected locality. His wound, nevertheless, progressed satisfactorily, and he was discharged without having had erysipelas.

Influence of the Disulphate of Quinia over the Intra-cranial Circulation.—There being some difference of opinion in regard to the influence of quinia on the intra-cranial circulation, some maintaining that it increased, and others that it diminished, the amount of blood in the cerebral vessels, Dr. W. A. HAMMOND, of New York, determined to settle the question experimentally, and gives the following relation (*Psychological and Medico-Legal Journal*, Oct. 1874) of the mode of procedure:—

"I resolved to take quinia myself, and to have my friend, Dr. Roosa, whose abilities as an ophthalmologist and aurist are indisputable, examine the fundus of the eye and the tympanum before the ingestion of the quinia, and during the continuance of its effects.

"The experiment was made on the evening of May 7, and I subjoin his report in his own words:—

"'Vision normal	$= \frac{20}{20}$
Refraction	emmetropic.
Pulse	90

"'Ocular conjunctivæ white, decidedly free from hyperæmia. Palpebræ congested at outer and inner canthus. Has no tinnitus arium. Membrana tympani entirely free from evidence of vessels. No congestion along handle of malleus.

"'Ophthalmoscopic examination of both eyes reveals a remarkably clear optic papilla on both sides. Arteries and veins, vertical and horizontal vessels clearly cut, and whole papilla sharply defined, rather pale than congested.

"'Took gr. x sulphate of quinia at 8.30 P. M. At 9 P. M. ocular conjunctiva is congested at outer and inner canthus. Palpebral conjunctiva markedly congested over whole surface. No change in optic papillæ or in drum-heads.

"'9.15. Surface of optic papillæ pinkish; arterial vessels seem more distinct; no change in appearance of drum-heads; no tinnitus aurium.

"'Head feels full; left ear rings; auricles burn; face is decidedly flushed; auricles red, especially lobe of right, where there is a localized congestion that is so marked as to resemble an ecchymosis. There is now a vessel along each malleus; optic papillæ are pinkish. Pulse 84, and fuller.

"'10½ P. M. Right drum-head is very much injected along handle of malleus and upper margin. Left less so, but yet injected. Both papillæ very pink, left more so than right. Flace flushed, eyes suffused, ocular conjunctiva decidedly congested. Slight headache; tinnitus in both ears.

"'11. Redness of auricles diminishing, especially the circumscribed spot on the lobe of the left one; face still flushed; tinnitus continues; no headache; feels exhilarated. Drum-heads still injected along malleus; not more so, however, rather less; optic papillæ have a decidedly pinkish hue; no more lateral vessels seen, however; right is especially pink. Tinnitus still continues; vision normal.' No further observations were made."

The phenomena, Dr. Hammond justly observes, indicated cerebral hyperæmia, but he determined to decide the question with even greater certainty.

"I therefore trephined a medium-sized dog, and screwed a cephalo-hæmometer into the opening into the skull made by the trephine, so that the fluid in the glass tube stood at zero.

"I then introduced into the cellular tissue ten grains of sulphate of quinia, dissolved in water acidulated with sulphuric acid. This was done at 3½ o'clock P. M.

"At 3.35 the fluid had risen one degree on the scale ($= \frac{1}{10}$ inch). It continued to rise gradually but steadily, till at 4.10 it had passed over ten degrees (= 1 inch of the tube). At 4.30, one hour after the injection of the quinia, the fluid was at $+15°$. It continued at this point till 5.10, when it began to fall, and at 8.15 was at zero. It remained stationary for over an hour, at no time falling to the minus division of the scale.